

## V. RESEARCH DESIGN AND METHODOLOGY

Management plans and regional syntheses for prehistoric resources in Delaware (Custer 1986, 1989, 1994; Custer and DeSantis 1986) provide the basis for assessing the overall archaeological sensitivity of the project area and for developing predictions regarding the presence of prehistoric sites. These management plans and syntheses provide settlement pattern data for the prehistory of the region that can be contrasted with patterns observed in Coastal Plain settings in adjacent regions such as New Jersey, where extensive research was conducted on the Abbott Farm National Landmark sites (Wall et al. 1996). The Delaware state plan describes expected site types and their landform associations, together with their chronologies, facilitating the identification of high-probability areas within a given project area. These management plans, together with predictive models developed by the University of Delaware Center for Archaeological Research (UDCAR), provide the basis for most of these predictions.

In Phase I investigations it is generally expected that sites will be found in areas close to high- and low-order streams, salt marshes, brackish and low-salinity marshes, and bay/basin features. The bay/basin depressions during the early Holocene were important water sources and a number of archaeological sites have been found adjacent to them.

The probability of identifying Paleoindian sites in the survey areas was considered to be low. Paleoindian quarries, quarry reduction stations, quarry-related base camps, base camps, and base camp maintenance stations are all considered to have a low probability for occurrence in the Mid-drainage management unit. Paleoindian hunting sites are considered to have a low to moderate probability for occurrence in the Mid-drainage management unit. A broad range of Archaic sites (macroband base camps, microband base camps, and procurement sites) are considered to have a medium probability for occurrence in the Mid-drainage management unit. A variety of Woodland I site types (macroband base camps, microband base camps, procurement sites, minor mortuary/exchange sites and major mortuary/exchange sites) are considered to have a moderate probability for occurrence in the Mid-drainage management unit. For the Woodland II period, macroband base camps and microband base camps have a medium probability for occurrence in the Mid-drainage management unit, while Woodland II procurement sites have a high probability for occurrence in the Mid-drainage management unit. Contact period sites are considered to have a low probability for occurrence in the Mid-drainage management unit (Custer and DeSantis 1986).

More specific predictions regarding the distribution of prehistoric sites within the project area were developed on the basis of the UDCAR predictive model for the nearby State Route 1 corridor, specifically Chestnut Grove Study Area Number 8 (Custer et al. 1986) and surveys by Custer in the St. Jones and Murderkill drainages (Custer and Galasso 1983), and from general analyses based on landform, slope, and surface water. Small procurement sites dating to the Woodland I and Woodland II periods were expected adjacent to the St. Jones River. Procurement sites dating to the Archaic, Woodland I, or Woodland II periods were expected closest to surface water settings of all types, especially wetlands. The edges of the St. Jones River were expected to have high-potential

locations for procurement sites or base camps dating to the Archaic, Woodland I, or Woodland II periods. General predictions regarding the occurrence of historic archaeological sites within the project area may be derived from the state management plans and from the project-specific background research.

#### A. PHASE I SURVEYS

Five separate survey areas—three proposed stormwater basin areas and two wetland replacement areas—were investigated during the Phase I study conducted by Berger as part of the present project. Because of the minimal surface visibility in all of the survey areas, testing was undertaken using close-interval (20 meters, or 66 feet) shovel testing on a grid pattern. All shovel tests were mapped onto 1"=100' maps supplied by DelDOT. Shovel tests measured approximately 50 centimeters (20 inches) in diameter and were excavated by natural soil strata. Schematic soil profiles, including soil texture and Munsell soil color notation, were recorded for each shovel test on a standardized form, and all excavated soil was screened through ¼-inch mesh. Black-and-white and color-slide photography were used to record sites and general field conditions throughout the study area.

The archaeological potential for the five Phase I survey areas was variable, and depended largely on proximity to surface water and wetland settings. Stormwater Basin No. 1, for example, which was adjacent to McKee Road, was not close to any permanent surface water, so the probability of identifying prehistoric sites there was considered relatively low. Stormwater Basin No. 2, located near a bay/basin feature and a first-order tributary of the St. Jones River, had a higher potential for prehistoric sites. Stormwater Basin No. 3 had the highest archaeological potential of the three, as it was located on a promontory adjacent to the St. Jones River and across from a major confluence. This location could have been the site of a large base camp or procurement camp from which aquatic resources of the St. Jones River and its extensive wetlands would have been exploited. The two wetland replacement areas were located further from associated surface water and were expected to have lower archaeological potential.

#### B. PHASE II INVESTIGATIONS AT THE FORD FARM SITE

Background research was conducted prior to the initiation of field investigations at the Ford Farm Site, and particular emphasis was placed on the findings from earlier Phase I surveys (e.g., Heite and Blume 1992, 1995a), excavations at the nearby White Marsh and Blueberry Hill sites (Heite and Blume 1995a, 1995b), and other pertinent background environmental and archaeological data (e.g., Bedell et al. 1995; Custer 1984, 1989, 1994; Kellogg and Custer 1994). Pertinent information from the Delaware State Historic Preservation Office's Archaeological Site Survey Instructions (revised in 1997) and the *Management Plan for Delaware's Prehistoric Cultural Resources* (Custer 1986) was also reviewed before the field investigations for this project were designed.

The area of the site where deeply buried deposits had been identified during the Phase I fieldwork was along the bluff line (Heite and Blume 1995a). In subsequent work on the site by Berger, it was determined that this area contained few artifacts. The more substantial occupation at the Ford Farm

Site appears to lie further from the bluff line. The estimated size of the site, which is roughly crescent-shaped, was determined at the initiation of Phase II investigations to be about 125 meters long by 50 meters wide (410 by 165 feet). Further away from the bluff, shallow deposits and disturbed areas are present. The Phase II excavations at the site consisted of 19 shovel tests, six 1x1-meter test units, three 1x2-meter test units, three expanded 1x2-meter test units, and one 2x2-meter test unit. In addition, two 30x50-centimeter units were excavated within the walls of the original Phase I units 193 and 195.

The testing strategy at the site involved the following steps:

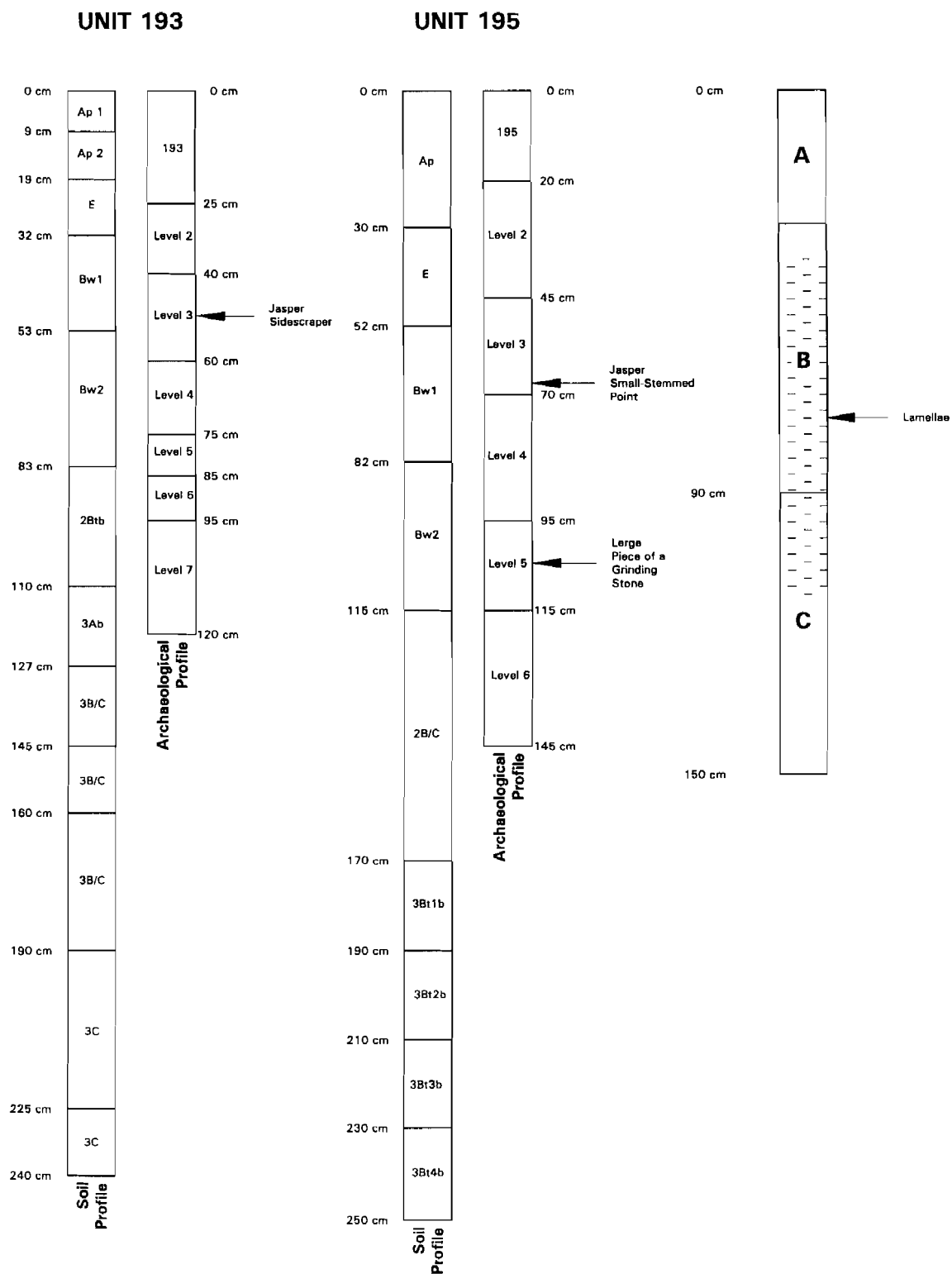
- 1) Locating and removing backfill from the Phase I units to determine the nature of the site stratigraphy more clearly.
- 2) Placing shovel tests along transects at 20-meter (66-foot) intervals within areas determined to contain undisturbed soils.
- 3) Placing 1x2-meter (3.3x6.6-foot) units across the undisturbed portion of the site.
- 4) Placing a single 2x2-meter unit near one of the more productive areas of the site to increase the probability of locating features and/or obtaining spatial data. One quarter of the 2x2-meter unit was screened using 1/8-inch mesh screen.
- 5) Scattering the remaining 1x1-meter units across the more productive areas of the site in an attempt to locate higher-density occupation surfaces. Additional shovel tests were also excavated at this stage because of the generally low yields from all units.
- 6) Placing 30x50-centimeter (12x20-inch) units in the walls of previously excavated (Phase I) 1x1-meter units to augment the information obtained from the earlier study.

Higher artifact densities were anticipated at the initiation of the Phase II excavations, but the preliminary results dictated the changes in testing strategy noted above in items 5 and 6.

Vertically, the site was excavated in 10-centimeter (4-inch) arbitrary levels. The reason this method was chosen was that evidence of plowing was lacking or very indistinct in some portions of the site. Consequently, A-horizons were divided into arbitrary 10-centimeter levels (e.g., A1, A2, A3). The indistinct lower boundary of the A-horizon was particularly evident in the southern portion of the site. In that portion the base of the A-horizon was indistinct and leached, indicating either that the A-horizon was unplowed or that it had not been plowed in some time. Below the A-horizon, coarse-textured sediments composed the remaining Holocene portion of the profile, which varied in depth across the site. It is estimated that the upper 1 meter of sediments comprised the Holocene stratigraphy on the site, which is shown in Figure 3, in simplified form, as an A/B/C sequence. A more detailed profile analysis undertaken by Foss for the Phase I investigation (Heite and Blume 1995a) shows a Holocene sequence beginning with an Ap surface horizon underlain by an E-horizon

**PHASE I PROFILES  
(AFTER HEITE AND BLUME  
1995a: FIG 16)**

**PHASE II  
GENERALIZED SITE PROFILES**



**FIGURE 3: Ford Farm Site, Locus E, Stratigraphy**

which is underlain by a thicker cambic (Bw) B-horizon. All artifacts recovered from the site during the Phase II work were essentially confined to these horizons, with the majority found in the A- and E-horizons.